

**Coconino Institute of Technology
Practice Entrance Assessment**

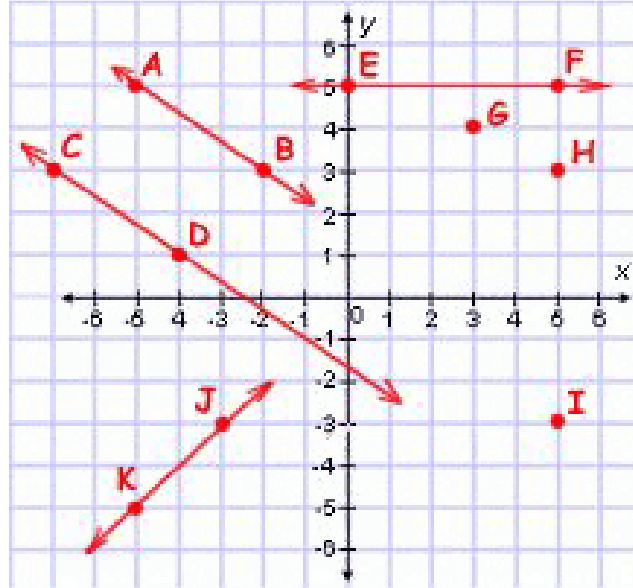


The following questions are similar to the types of problems you will see when you test to get into CIT. The answer key is included. The actual entrance assessment will be multiple choice. Please bring a #2 pencil and a scientific calculator to the test. Good luck!

Directions: Solve for X.

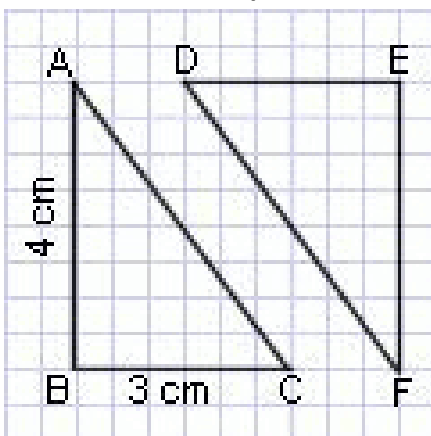
1. $14 = x + 12$ Answer: _____
2. $2 = x/2$ Answer: _____
3. $x + 3 > 7$ Answer: _____
4. $2x = -3$ Answer: _____
5. $8x = -64$ Answer: _____
6. Find speed in ft/sec when distance = 10 ft and t = 5 seconds. Answer: _____
7. $10 = -5x$ Answer: _____
8. $15 = 10 - x$ Answer: _____
9. $5^x = 25$ $x = ?$ Answer: _____
10. Evaluate $3x^2 - 2x$ when $x = -3$ Answer: _____
11. Evaluate $5x^3 + 7x^2$ when $x = 2$ Answer: _____
12. Simplify $2x^2 + 3x^3 - 4x^2$ Answer: _____
13. Simplify $x^3 - 2x^2(x+1)$ Answer: _____

Use the graph below to answer questions 14-21.



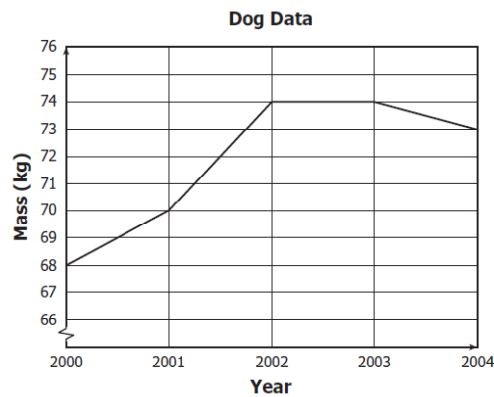
14. What are the coordinates of point I? Use (X,Y) format. Answer: _____
15. What is the slope of line EF? Answer: _____
16. What are the coordinates of point G? Use (X,Y) format. Answer: _____
17. What are the coordinates of point H? Use (X,Y) format. Answer: _____
18. What is the slope of line JK? Answer: _____
19. What is the y-intercept of line EF? Answer: _____
20. What is the equation for line EF? (Remember $y = mx + b$) Answer: _____
21. What is the equation for line JK? Answer: _____
22. What is the equation for line CD? Answer: _____
23. What is the equation for line AB? Answer: _____

Use the picture below to answer questions 24-27.

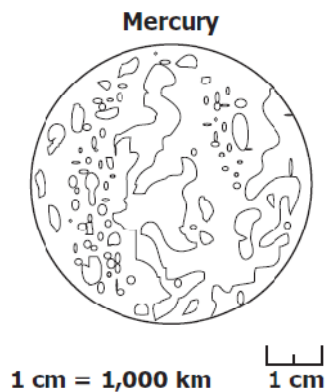


24. What is the length of the hypotenuse of triangle ABC? Answer: _____
25. What is the length of side DE? Answer: _____
26. What is the length of side EF? Answer: _____
27. What is the length of the hypotenuse of triangle DEF? Answer: _____

28. $3.5 \times 0.72 = ?$ Answer: _____
29. $-64/0.8 = ?$ Answer: _____
30. What is the square root of 121? Answer: _____
31. What is 15% of 65? Answer: _____
32. Solve 13^2 . Answer: _____
33. What is the average of this set of data: 4.5, 4.8, 5.2, 4.2, 5.0? Answer: _____
34. This graph shows data about a dog. Describe what the data shows.



35. A student predicts that similar ice cubes will melt faster in a microwave than in a pot on the stove. How should this hypothesis be tested?
36. A scale model of the planet Mercury is shown. Based on the scale, what is the diameter of Mercury?



37. A student suspects that there is a relationship between the amount of sunny weather in a given state and the amount of solar energy used by its inhabitants. In order to find out if this information is correct, what information will the student need from each state?

Answers:

1. $x = 2$
2. $x = 4$
3. $x > 4$
4. $x = -3/2$
5. $x = -8$
6. 2 ft/s
7. $x = -2$
8. $x = -5$
9. $x = 2$
10. 33
11. 48
12. $3x^3 - 2x^2$ or $x^2(3x-2)$
13. $x^3 - 2x^2$ or $-x^2(1+2)$
14. (5, -3)
15. 0
16. (3, 4)
17. (5, 3)
18. 1/1
19. 5
20. $y = (0)x + 5$
21. $y = 1(x) + 0$
22. $y = (-2/3)x - (5/3)$
23. $y = (-2/3)x + (5/3)$
24. 5 cm
25. 4 cm
26. 3 cm
27. 5 cm
28. 2.52
29. -80
30. 11
31. 9.75
32. 169
33. 4.74
34. Gained mass for first two years, stayed the same for 3rd, lost mass 4th
35. Design an experiment to measure time to melt
36. About 5000 km
37. The number of sunny days per year and the amount of solar energy used per year